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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/756,427

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Petteri Poyhonen

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2678

32294

7590

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EXAMINER

SHIN, KYUNG H

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/756,427	Applicant(s) POYHONEN ET AL.	
	Examiner KYUNG H. SHIN	Art Unit 2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4, 6 - 14, 16 - 19, 21 - 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6 - 14, 16 - 19, 21 - 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/22/2008 has been entered.

2. This application was filed on **1-14-2004**. Claims **1, 2, 4, 6 - 14, 16 - 19, 21 - 39** are pending. Claims **10, 14, 19, 21, 25, 29, 30, 33** have been amended. Claims **36 - 39** are new. Canceled claims are **3, 5, 15, 20**. Claims **1, 19, 34, 35, 36** are independent.

Response to Arguments

3. Applicant's arguments filed 4/22/2008 have been fully considered but they moot due to new grounds of rejection.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: **Claim 34** is objected as “**computer readable medium**”,

"computer program product" are not defined clearly in the specification, so that the meaning of the term in the claims is not ascertainable by reference to the specification.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims **1, 2, 4, 6 - 14, 16 - 19, 21 - 39** are rejected under 35 U.S.C. 103 (a) as being unpatentable over **McCanne et al.** (US Patent No. **6,415,323**) in view of **Sala et al.** (US Patent No. **7,333,495**) and further in view of **Cable et al.** (US Patent No. **6,854,013**).

Regarding Claim 1, McCanne discloses a method comprising:

- a) providing a service with a service process in a server; (McCanne col 3, ll 45-54; col 19, ll 27-34: service providing server)
- b) configuring a service-specific anycast address to a server interface on a communication link via which the server receives messages from a router or other servers; (McCanne col 4, ll 59-66: network layer load balance, services providing; col 5, ll 21-25; col 5, ll 58-60: anycast communications protocol (IPv6); col 5, ll 7-10: server farm (cluster), process services based on load; col 3, ll 45-54: servers provides messaging between servers)

Art Unit: 2154

- c) monitoring the service process and the service-specific anycast address configured interface; (McCanne col 6, ll 8-10; col 6, ll 25-26; col 12, ll 9-15: monitoring service processing of services)
- e) sending an advertisement message when the service process is able to provide the service via the communication link to all other servers in response to the scheduling. (McCanne col 7, ll 34-40: server advertisement, available service(s))

McCanne discloses the usage for an advertisement message. (McCanne col 7, ll 34-40: advertisement message(s) from server) McCanne does not explicitly disclose scheduling the service process.

However, Sala discloses:

- d) scheduling the service process; (Sala col 2, l 55 – col 3, l 1: scheduling a plurality of services operating over a widely distributed communications network; col 4, ll 22-24: scheduler that arbitrates bandwidth requirements among multiple modems)

It would have been obvious to one of ordinary skill in the art to modify McCanne to enable the capability for scheduling service processes as taught by Sala. One of ordinary skill in the art would have been motivated to employ the teachings of Sala in order to provide a simple, efficient and cost-effective way to schedule and classify communications in a dynamic environment. (Sala col 2, ll 48-51: “ ... *Consequently, a system and method are needed to solve the above-identified problems and provide a simple, efficient and cost-effective way to schedule communications in an classify packets in a dynamic environment....* ”)

McCanne-Sala does not explicitly disclose taking advertisement messages received from other servers into account in determining the need for an advertisement message. However, Cable discloses wherein to take advertisement messages received to the service-specific anycast address from other servers into account in determining the need for an advertisement message. (Cable col 4, ll 31-43: each server advertises its available bandwidth or capacity; server controller takes this information into account for all of the servers; then offers fair shares of the servers' aggregate egress bandwidth; (server advises of unused capacities of all servers; then advertises aggregate unused capacity))

It would have been obvious to one of ordinary skill in the art to modify McCanne to take advertisement messages received from other servers into account in determining the need for an advertisement message as taught by Cable. One of ordinary skill in the art would have been motivated to employ the teachings of Cable in order for optimizing network service for users of packet switched networks and for determining the best server to satisfy a user's request and ensuring there is adequate bandwidth between that server and user. (Cable col. 1, lines 6-11: "... *The present invention relates to a method and apparatus for optimizing network service for users of packet switched networks such as the Internet and, more particularly, for determining the best server to satisfy a user's request and ensuring there is adequate bandwidth between that server and user. ...*")

Art Unit: 2154

Regarding Claims 2, 23, McCanne discloses the method, apparatus according to claims 1, 19, where the sending of the advertisement message is activated by a solicitation message from the router. (McCanne col 7, ll 34-40: routing information (advertisement) transfer from router to server)

Regarding Claims 4, 24, McCanne discloses the method, apparatus according to claims 2, 19, wherein neighbor discovery protocol is used, wherein said solicitation message is a neighbor solicitation message and said advertisement message is an unsolicited neighbor advertisement message wherein an override flag is set. (McCanne col 18, ll 19-24: neighbor discovery protocol; col 9, ll 33-42; col 9, line 61 - col 10, line 2: service discovery utilizing DNS naming convention); col 7, ll 34-40; col 8, ll 14-23: advertisement messaging to manage load balancing and service requests)

Regarding Claims 6, 25, McCanne discloses the method, apparatus according to claims 1, 19, further comprising: delaying the sending of a new advertisement message. (McCanne col 7, ll 49-52: stop sending packets, server to router)

Regarding Claims 7, 26, McCanne discloses the method, apparatus according to claims 1, wherein if the server receives less than a predefined number of service queries in a predefined time interval, the method further comprises: stopping the sending of the advertisement messages; and switching to a standby mode. (McCanne col 7, ll 49-52: advertisement message(s) stopped)

Regarding Claims 8, 27, McCanne discloses the method, apparatus according to claims 7, 26, wherein if the server being in the standby mode receives a solicitation message, the sending of the advertisement messages continues. (McCanne col 7, ll 34-40: send advertisement message(s))

Regarding Claims 9, 28, McCanne discloses the method, apparatus according to claims 1, 19, wherein when the service process in a server stops, sending of the advertisement messages is stopped. (McCanne col 7, ll 49-52: service stops, advertisement stops)

Regarding Claims 10, 29, McCanne discloses the method, apparatus according to claims 1, 19, wherein open shortest path first version 6 protocol is used in communication between the router and the servers. (McCanne col 5, ll 21-25: col 7, ll 42-52: IPv6 (anycast) communications, OSPF protocol; col 12, ll 50-54, col 8, ll 52-53: utilizing (open) shortest path protocol)

Regarding Claims 11, 30, McCanne discloses the method, apparatus according to claims 1, 19, further comprising: sending an advertisement message with a route cost value suitable for the current situation in the server. (McCanne col 18, ll 39-41; col 19, ll 45-48: cost factor utilized in routing determination)

Art Unit: 2154

Regarding Claims 12, 31, McCanne discloses the method, apparatus according to claims 11, 30, further comprising increasing the route cost value if the server providing service is getting congested. (McCanne col 18, ll 39-41; col 18, ll 45-48: server congestion increased, cost factor utilized to determine server(s), look to more distant servers (increase route cost) to offload services)

Regarding Claims 13, 32, McCanne discloses the method, apparatus according to claims 11, 30, further comprising decreasing the route cost value if the server providing service has capacity for new service queries. (McCanne col 18, ll 39-41; col 18, ll 45-48: server congestion reduced, cost factor utilized to determine server to offload services)

Regarding Claims 14, 33, McCanne discloses the method, apparatus according to claims 1, 19, wherein the advertising message is an open shortest path first version 6 link state advertisement message. (McCanne col 5, ll 21-25: col 7, ll 42-52: IPv6 (anycast) communications; col 7, ll 34-40: advertisement messages (IPv6 communications); col 12, ll 50-54, col 8, ll 52-53: utilizing (open) shortest path protocol)

Regarding Claim 16, McCanne discloses the method according to claim 1, further comprising: sending an advertisement message with service load information. (McCanne col 12, ll 48-50; col 12, ll 55-57: advertisement, load balance information)

Regarding Claim 17, McCanne discloses the method according to claim 1, further

Art Unit: 2154

comprising delivering the service load information of the server with a separate protocol (McCanne col 18, line 64 - col 19, line 8; col 19, ll 11-13: delivery server load information, from information database, different protocol and procedure)

Regarding Claim 18, McCanne discloses the method according to claim 1, wherein the service is domain name system service. (McCanne col 9, ll 33-42; col 9, line 61 - col 10, line 2: DNS (naming service) utilized in service provisioning)

Regarding Claim 19, McCanne discloses an apparatus, comprising:

- a) a service process configured to provide service on a communication link via which the server is adapter to receive messages from a router or other servers; (McCanne col 3, ll 45-54: provide a service; col 19, ll 27-34: messaging between servers and routers)
- b) a service-specific anycast address configured to a server interface on the communication link; (McCanne col 5, ll 21-25; col 5, ll 58-60: anycast (IPv6) address; col 7, ll 34-40: service advertisement)
- c) a monitor configured to monitor said service process and the service-specific anycast address configured interface; (McCanne col 6, ll 8-15: monitoring service processing)
- e) a transmitter configured to send an advertisement message when the service process is able to provide the service via the communication link to all other

servers in response to the scheduling of the service scheduler. (McCanne col 7, ll 34-40: server advertisement, available service(s))

McCanne discloses the usage for an advertisement message. (McCanne col 7, ll 34-40: advertisement message(s) from server) McCanne does not explicitly disclose a scheduler configured to schedule.

However, Sala discloses:

d) a scheduler configured to schedule (Sala col 2, l 55 – col 3, l 1: scheduling a plurality of services operating over a widely distributed communications network; col 4, ll 22-24: scheduler that arbitrates bandwidth requirements among multiple modems)

It would have been obvious to one of ordinary skill in the art to modify McCanne to enable the capability for scheduling service processes as taught by Sala. One of ordinary skill in the art would have been motivated to employ the teachings of Sala in order to provide a simple, efficient and cost-effective way to schedule and classify communications in a dynamic environment. (Sala col 2, ll 48-51)

McCanne does not explicitly disclose determining the need for an advertisement message taking into account advertisement messages received to the service-specific anycast address from other servers. However, Cable discloses a need for an advertisement message, wherein configured to take into account in determining the need for an advertisement message advertisement messages received to the service-specific anycast address from other servers. (Cable col 4, ll 31-43: each

Art Unit: 2154

server advertises its available bandwidth or capacity; server controller takes this information into account for all of the servers; then offers fair shares of the servers' aggregate egress bandwidth; (server advises of unused capacities of all servers; then advertises aggregate unused capacity))

It would have been obvious to one of ordinary skill in the art to modify McCanne to take advertisement messages received from other servers into account in determining the need for an advertisement message as taught by Cable. One of ordinary skill in the art would have been motivated to employ the teachings of Cable in order for optimizing network service for users of packet switched networks and for determining the best server to satisfy a user's request and ensuring there is adequate bandwidth between that server and user. (Cable col. 1, lines 6-11)

Regarding Claim 21, McCanne discloses the apparatus to claim 19 wherein the transmitter is further configured to enclose service load information in the advertisement message. (McCanne col 12, ll 48-50; col 12, ll 55-57: routine message, load balance information transferred between routers)

Regarding Claim 22, McCanne discloses the apparatus to claim 19, wherein the service in the server is the domain name system service. (McCanne col 9, ll 33-42; col 9, line 61 - col 10, line 2: DNS naming service utilize in service provisioning)

Regarding Claims 34, 35, McCanne discloses a computer program embodied on a computer readable medium, the computer readable medium storing code comprising computer executable instructions, and an apparatus comprising:

- a) providing a service with a service process in a server; (McCanne col 3, ll 45-54; col 19, ll 27-34: service providing server)
- b) configuring a service-specific anycast address to a server interface on a communication link via which the server receives messages from a router or other servers; (McCanne col 4, ll 59-66: network layer load balance, services providing; col 5, ll 21-25; col 5, ll 58-60: anycast communications protocol (IPv6); col 5, ll 7-10: server farm (cluster), process services based on load; col 3, ll 45-54: servers provides messaging between servers)
- c) monitoring the service process and the service-specific anycast address configured interface; (McCanne col 6, ll 8-10; col 6, ll 25-26; col 12, ll 9-15: monitoring service processing of services)
- e) sending an advertisement message when the service process is able to provide the service via the communication link to all other servers in response to the scheduling. (McCanne col 7, ll 34-40: server advertisement, available service(s))

McCanne discloses the need for an advertisement message. (McCanne col 7, ll 34-40: advertisement message(s) from server) McCanne does not explicitly disclose scheduling the service process.

However, Sala discloses:

d) scheduling the service process; (Sala col 2, l 55 – col 3, l 1: scheduling a plurality of services operating over a widely distributed communications network; col 4, ll 22-24: scheduler that arbitrates bandwidth requirements among multiple modems)

It would have been obvious to one of ordinary skill in the art to modify McCanne to enable the capability for scheduling service processes as taught by Sala. One of ordinary skill in the art would have been motivated to employ the teachings of Sala in order to provide a simple, efficient and cost-effective way to schedule and classify communications in a dynamic environment. (Sala col 2, ll 48-51)

McCanne does not explicitly disclose wherein configured to take advertisement messages received to the service-specific anycast address from other servers into account in determining the need for an advertisement message. However, Cable discloses wherein configured to take advertisement messages received to the service-specific anycast address from other servers into account in determining the need for an advertisement message. (Cable col 4, ll 31-43: each server advertises its available bandwidth or capacity; server controller takes this information into account for all of the servers; then offers fair shares of the servers' aggregate egress bandwidth; (server advises of unused capacities of all servers; then advertises aggregate unused capacity))

It would have been obvious to one of ordinary skill in the art to modify McCanne to take advertisement messages received from other servers into account in determining the need for an advertisement message as taught by Cable. One of

ordinary skill in the art would have been motivated to employ the teachings of Cable in order for optimizing network service for users of packet switched networks and for determining the best server to satisfy a user's request and ensuring there is adequate bandwidth between that server and user. (Cable col. 1, lines 6-11)

Regarding Claim 36, McCanne discloses an apparatus, comprising:

- a) a service process configured to provide service on a communication link via which the server is adapted to receive messages from a router or other servers; (McCanne col 3, ll 45-54; col 19, ll 27-34: service providing server)
- b) a service-specific anycast address configured to a server interface on the communication link; (McCanne col 4, ll 59-66: network layer load balance, services providing; col 5, ll 21-25; col 5, ll 58-60: anycast communications protocol (IPv6); col 5, ll 7-10: server farm (cluster), process services based on load; col 3, ll 45-54: servers provides messaging between servers)
- c) monitoring means for monitoring said service process and the service-specific anycast address configured interface; (McCanne col 6, ll 8-10; col 6, ll 25-26; col 12, ll 9-15: monitoring service processing of services)
- e) sending means for sending an advertisement message when the service process is able to provide the service via the communication link to all other servers in response to the scheduling of the service scheduling means. (McCanne col 7, ll 34-40: server advertisement, available service(s))

Art Unit: 2154

McCanne discloses the usage for an advertisement message. (McCanne col 7, ll 34-40: advertisement message(s) from server) McCanne does not explicitly disclose scheduling the service process.

However, Sala discloses:

d) service scheduling means for scheduling the service process; (Sala col 2, l 55 – col 3, l 1: scheduling a plurality of services operating over a widely distributed communications network; col 4, ll 22-24: scheduler that arbitrates bandwidth requirements among multiple modems)

It would have been obvious to one of ordinary skill in the art to modify McCanne to enable the capability for scheduling service processes as taught by Sala. One of ordinary skill in the art would have been motivated to employ the teachings of Sala in order to provide a simple, efficient and cost-effective way to schedule and classify communications in a dynamic environment. (Sala col 2, ll 48-51)

McCanne-Sala does not explicitly disclose determining the need for an advertisement message by taking into account advertisement messages received to the service-specific anycast address from other servers. However, Cable discloses wherein a need for an advertisement message, wherein the service scheduling means are configured to take into account in determining the need for an advertisement message advertisement messages received to the service-specific anycast address from other servers. (Cable col 4, ll 31-43: each server advertises its available bandwidth or capacity; server controller takes this information into account for all of the servers; then offers fair shares of the servers' aggregate egress

Art Unit: 2154

bandwidth; (server advises of unused capacities of all servers; then advertises aggregate unused capacity))

It would have been obvious to one of ordinary skill in the art to modify McCanne to take advertisement messages received from other servers into account in determining the need for an advertisement message as taught by Cable. One of ordinary skill in the art would have been motivated to employ the teachings of Cable in order for optimizing network service for users of packet switched networks and for determining the best server to satisfy a user's request and ensuring there is adequate bandwidth between that server and user. (Cable col. 1, lines 6-11)

Regarding Claim 37, McCanne discloses the apparatus to claim 36 further comprising means for enclosing service load information in the advertisement message. (McCanne col 12, ll 48-50; col 12, ll 55-57: advertisement, load balance information)

Regarding Claim 38, McCanne discloses the apparatus according to claim 36, wherein the service scheduling means are configured to delay the sending of a new advertisement message. (McCanne col 7, ll 49-52: stop sending packets, server to router)

Regarding Claim 39, McCanne discloses the apparatus according to claim 36, wherein the server comprises means for enclosing a route cost value suitable for the current situation of the service process in the server sending means in the advertisement

message. (McCanne col 18, ll 39-41; col 19, ll 45-48: cost factor utilized in routing determination)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KYUNG H. SHIN whose telephone number is (571)272-3920. The examiner can normally be reached on 9:30 am - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. FLYNN can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kyung Hye Shin
Examiner
Art Unit 2143

Application/Control Number: 10/756,427

Page 18

Art Unit: 2154

KHS

May 27, 2008

/Nathan J. Flynn/

Supervisory Patent Examiner, Art Unit 2154